

From: [Sanchez, Carlos](#)
To: [Khoury, Ghassan](#); [Tzhone, Stephen](#); [Rauscher, Jon](#)
Cc: [Villarreal, Chris](#)
Subject: RE: Draft discussion of principal threat waste at the Arkwood AR site
Date: Wednesday, June 03, 2015 7:29:30 AM

Ghassan,

To give us, non-risk assessors, a better idea of what an HQ equates to, is an HQ of 1 equal (approximately) to 1×10^{-6} cancer risk? This may be comparing apples to oranges, but we (engineers) are trying to figure out what an HQs of 23 is. Thanks CAS

From: Khoury, Ghassan
Sent: Tuesday, June 02, 2015 5:08 PM
To: Sanchez, Carlos; Tzhone, Stephen; Rauscher, Jon
Cc: Villarreal, Chris
Subject: RE: Draft discussion of principal threat waste at the Arkwood AR site

The maximum dioxin TEQ level under the cover is 16,750 ppt. The noncancer hazard or hazard quotient associated with 16,750 ppt is about 23 assuming default values for an industrial worker. This is much higher than the EPA acceptable HQ of 1. Marlene in her statement used the cancer effect of 1×10^{-3} as the basis for Principal Threat waste as reported in the 1991 document. However, for dioxin, we still do not have a good value or IRIS value for cancer effects. The toxicity value for dioxin is based on reduced sperm count in men exposed to dioxin as boys. The study is based on human cohort study with a high confidence in the study. The question is whether a HQ of 23 would categorize a waste as a Principal Threat waste or not.

From: Sanchez, Carlos
Sent: Tuesday, June 02, 2015 3:26 PM
To: Tzhone, Stephen; Khoury, Ghassan; Rauscher, Jon
Cc: Villarreal, Chris
Subject: RE: Draft discussion of principal threat waste at the Arkwood AR site

I do not believe that the soils contaminated with Dixon should be considered Principal Threat Waste. The

I believe that some in HQs also agree that the soils are not PTW.

There is different criteria that is used in declaring Source Materials as PTW. One of them is toxicity, but there is other criteria.

Stephen,

I believe that we were going to get clarification from HQs. We (Region 6) should wait until we hear from HQs. Otherwise, I would say that it is not PTW. CAS

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From: Tzhone, Stephen
Sent: Tuesday, June 02, 2015 10:55 AM
To: Khoury, Ghassan; Rauscher, Jon
Cc: Sanchez, Carlos; Villarreal, Chris
Subject: RE: Draft discussion of principal threat waste at the Arkwood AR site

Jon, Ghassan: Send by Monday June 8.

We need to resolve this so we can move forward with our final soil and gw comments to the PRPs.

From: Khoury, Ghassan
Sent: Tuesday, June 02, 2015 10:40 AM
To: Tzhone, Stephen; Rauscher, Jon
Cc: Sanchez, Carlos; Villarreal, Chris
Subject: RE: Draft discussion of principal threat waste at the Arkwood AR site

When do you need a response? It is principal threat waste based on toxicity. So I am trying to look for some documents related to the toxicity of dioxin.

From: Tzhone, Stephen
Sent: Tuesday, June 02, 2015 10:14 AM
To: Rauscher, Jon; Khoury, Ghassan
Cc: Sanchez, Carlos; Villarreal, Chris
Subject: FW: Draft discussion of principal threat waste at the Arkwood AR site

Any comments on the attachment from the email I forwarded yesterday?

From: Tzhone, Stephen
Sent: Monday, June 01, 2015 4:03 PM
To: Berg, Marlene
Subject: RE: Five Year Coordinator for the Remedial Branch

Yes, I reviewed it with my section chief who wanted the risk assessors to weigh in. It is with them right now.

Thus far, if they agree, we will be summarizing our position with the agreed language and responding back to you and Robin.

From: Berg, Marlene
Sent: Monday, June 01, 2015 3:42 PM

To: Tzhone, Stephen

Subject: Fw: Five Year Coordinator for the Remedial Branch

Steve,

Welcome to being the FYR coordinator for the Remedial Branch!

I will be sending you info w/r to FYRs and dioxin.

And, while I am thinking about it, did you receive the write-up on principal threats at Arkwood that I sent you on Thursday?

Marlene